

CLIMATOLOGICAL DATA FOR JULY, 1911.

DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. MCADIE, District Editor.

GENERAL SUMMARY.

With the exception of a period of about 10 days during the first half of July, 1911, the month was cool. In other portions of the United States, particularly the central and eastern portions, the month will long be remembered for high temperatures and protracted heat. In a special bulletin it was stated that—

An examination of the weather conditions in the United States during the past 40 years does not disclose another period in the late spring and early summer when the temperatures have been so uniformly high for so long a period and over such a large portion of the country.

Doubtless in the separate reports published in this issue of the Monthly Weather Review attention is called by the various editors to this condition of excessive heat. So far as the Pacific coast is concerned, the condition has been just the opposite. The spring months have been marked by cool weather and the summer thus far, with the exception of the one short period referred to above, has also been cool. At San Francisco, where the range in temperature is small and departures are seldom noticeable, the month was the coolest since 1901. In fact, along the coast north of Point Conception low temperatures and fog were so much in evidence that instead of favorable comment on cool conditions there was general remark on the unpleasant and disagreeable character of the weather. Along the coast south of Point Conception, however, while there was much high fog, the temperatures were moderate and at most points above normal. In the interior there were few excessively hot days, and on the whole the summer has been a pleasant one.

Little rain fell, and what did was in the form of afternoon showers in the Sierra and southern mountains of the State. Water was plentiful, and, while streams fell gradually, there was no lack of fresh running water in the foothills and mountains and no apprehension of scarcity for irrigation or power. The season has been a good one for all interests. Fruit ripened nicely and there was no damage by hot north winds or dry periods. The soil contained plenty of water and the snow disappeared from the 7,000-foot level by July 10. This date, however, is later by at least two weeks than the normal. July was an unusually favorable month for travel in the mountains. Tourists and pleasure seekers were able to enjoy full streams and magnificent effects in waterfalls, owing to the large volume of water from the heavy snow cover of the higher levels. Usually this condition is restricted to the month of June, and often a noticeable reduction in the volume of water occurs before the middle of that month.

One of the features of the month was a period of thunderstorm frequency, July 15 to 17. Elsewhere are given details of damage done by lightning in these mountain storms. Frequent thunderstorms were reported

also in southeastern California, one especially severe in Imperial County on July 15.

From an engineering point of view the most interesting feature of the month's weather was the abundance of water for power purposes. July, 1911, was in marked contrast with July, 1910, in this respect. Then the section reports foreshadowed a scarcity of water early in the season. There was less snow in sight than at any previous similar date since the settlement of the country and water courses contained little water. This year the run-off is excessive and streams are carrying a full head. Taken together the two months furnish important data bearing on the question of the influence of forested areas upon rainfall and run-off. The marked deficiency in run-off last summer and the marked excess this summer afford a definite and clear demonstration that in the main variations in rainfall and run-off are not controlled by or materially affected by such artificial conditions as deforestation or settlement of area, but are primarily and effectually determined by natural causes acting over large areas. It is plain that there was no change in the forest conditions or in the reclamation of land during the two years, and yet we have the extreme conditions of run-off, and rainfall or snowfall.

TEMPERATURE.

The mean temperature for the State was 74.1° , or slightly above the normal. This mean value, however, gives no indication of the unusually cool condition prevailing in the coast counties north of Point Conception during most of the month. Also it gives no clew to the generally cool character of the month in certain parts of the interior.

The following table gives the means and departures for each July from 1897 to 1911, inclusive:

Years.	Mean.	Departure.	Years.	Mean.	Departure.
	$^{\circ}F.$	$^{\circ}F.$		$^{\circ}F.$	$^{\circ}F.$
1897.....	74.5	+0.9	1905.....	74.8	+1.2
1898.....	81.4	+7.8	1906.....	76.8	+3.2
1899.....	77.9	+4.3	1907.....	73.1	-5
1900.....	75.9	+2.3	1908.....	76.4	+2.8
1901.....	76.0	+2.4	1909.....	71.2	-2.4
1902.....	72.8	- .8	1910.....	75.5	+1.9
1903.....	71.2	-2.4	1911.....	74.1	+ .5
1904.....	72.2	-1.4			

The highest temperature reported at any station was 117° , which occurred at Indio on the 15th and Palm Springs on the 30th. This was 2° lower than the highest temperature recorded during July, 1910. The lowest temperature was 28° at Tamarack on July 1. This was 6° warmer than the lowest temperature recorded during July, 1910.

PRECIPITATION.

The average monthly precipitation for the State was 0.10 of an inch. This is slightly above the normal.

The following table gives the average and departure from the normal for each July from 1897 to 1911, inclusive:

Years.	Mean.	Departure.	Years.	Mean.	Departure.
	Inches.	Inches.		Inches.	Inches.
1897.....	.01	-0.05	1905.....	.01	-0.05
1898.....	T.	-.06	1906.....	.04	-.02
1899.....	T.	-.06	1907.....	.03	-.03
1900.....	.03	-.03	1908.....	.04	-.02
1901.....	.01	-.05	1909.....	.05	-.01
1902.....	.70	+.64	1910.....	.10	+.04
1903.....	.03	-.03	1911.....	.10	+.04
1904.....	.09	+.03			

The greatest monthly rainfall was 2.50 inches, at Mammoth Tank. One-half of the stations reporting had no rainfall during the month. The distribution of the rain geographically was far from uniform. Afternoon thundershowers in the mountains and a few misting rains along the north coast made up the rainfall.

Snowfall.—No snow was reported at any station in California. There probably were, however, some light falls at elevations above 10,000 feet.

SUNSHINE.

The following table gives the total hours of sunshine and percentages of the possible:

Stations.	Hours.	Percent-age of possible.	Stations.	Hours.	Percent-age of possible.
Eureka.....	163	36	Sacramento.....	414	92
Fresno.....	421	94	San Diego.....	251	57
Los Angeles.....	315	72	San Francisco.....	264	59
Mount Tamalpais.....	435	97	San Jose.....	361	81
Red Bluff.....	424	93	San Luis Obispo.....	295	67

THUNDERSTORMS.

Lightning struck Glacier Point in the Yosemite Valley during the afternoon of July 16 and killed 9 out of 18 horses tethered under a tree near the hotel. Over a score of tourists were in the hotel and had just dismounted. The storm was severe in the Wawona section, and the rainfall was so heavy that the Merced River rose to a height of 12 feet and did some damage in the Mariposa Big Tree Grove. On July 14 another thunderstorm and heavy rainfall raised the Merced River 4 feet, causing, it is said, greater flood conditions than during June, when melting snow caused an overflow over a portion of the valley. The flume carrying water to the electric-light station was put out of commission, crippling the power plant and leaving the Valley hotel and camp in darkness on July 14 and until repairs could be made.

On July 15, at El Centro, a storm of some violence, moving from the southeast, struck the section about 3.20 p. m. While the storm lasted only a few minutes, it damaged property to the extent of \$30,000. Two lives were lost by falling walls. Many people were injured. The First Presbyterian Church was entirely demolished; the warehouse of the California Cotton Co. collapsed, burying beneath its heavy timbers three Hindoo laborers, two of whom subsequently died. A feed and fuel shed collapsed and several storage and drying sheds and small

office buildings, together with some residences, were destroyed.

At Campo thunderstorms and at Sonora rains prevailed from the 3d to the 29th. On the morning of the 27th a severe electrical storm from Campo west to the coast foothills knocked down telegraph poles, killed two mules, and stunned children leaning on fences. In the afternoon a similar storm occurred from Campo east, causing heavy rain in the valleys to the east and on the desert.

At Downieville on the 15th a severe thunderstorm north and northeast was reported, with a cloudburst at Bassetts, causing a rise in the South Fork of the Yuba of about 2 feet.

At Hornbrook on the 24th a heavy thunderstorm with 2 inches of rain occurred, and on the 25th a thunderstorm with a trace of rain.

EARTHQUAKES.

July 1, San Francisco: A severe shock occurred at 2.00:05 p. m. to 2.00:25 p. m., one hundred and twentieth meridian time. It was felt in the Weather Bureau office and the time noted by Observers Scholl and Rogers. No tremulous motion was felt before the principal disturbance, and there was no rocking motion at the end. There were two well-marked vibrations, with an interval of about five seconds. The vertical motion was perceptible, the apparent direction from west to east, and the duration of sensible motion was about 20 seconds. The intensity was No. 7 on the Rossi-Forel scale. No sounds were heard and few objects were overturned.

San Jose, July 1 (Mr. Maurice Connell, observer), reports that one of the severest shocks since the memorable quake of 1906 occurred at 2.00:30 p. m. The movement seemed to be entirely vertical, which would indicate that the locus of the disturbance centered near San Jose. There was a loud roaring-like noise, but the period of active disturbance lasted not over 10 seconds. Damage was not great, plastering being loosened and some brick walls cracked.

Santa Clara, July 1, seismographic station of the Jesuit seismologic service, Rev. J. S. Rickard, S. J., director; Mr. A. J. Newlin, assistant: Most severe shock since April 18, 1906. Tracer thrown off paper, but quickly replaced. Apparently little damage done in this vicinity.

Dr. A. O. Leuschner, professor of astronomy and director of the Students' Observatory, and Mr. Strula Einarsen, instructor in practical astronomy in the University of California, Berkeley, issued a report on the earthquake of July 1, of which the following is a part:

The earthquake began without preliminary tremor at 2^h 00^m 28^s±. The period of vertical vibration was approximately 3 seconds, indicating that the center of the earthquake was not as close as one might be tempted to suspect.

The total duration of the motion as shown by the records was roughly 27 minutes, of which 18 minutes were marked by perceptibly strong motion, 10 minutes as heavy motion, and 5 minutes by great intensity. The intensity was 5 on the Rossi-Forel scale; it was a smart shock, generally felt; furniture was shaken, and some clocks were stopped, notably the time clock of the Students' Observatory, this for the first time since the earthquake of April 18, 1906.

NOTE ON EARTHQUAKE OF JULY 1, 1911, AT MOUNT HAMILTON.

The earthquake of July 1, 1911, was in some respects the most severe one experienced since the observatory was founded. The amplitude of vibration was less than

TABLE 1.—Climatological data for July, 1911. District No. 11, Oregon.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.				
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Oregon.</i>																				
Klamath Agency.	Klamath.	4,169	3																	
Klamath Falls.	do.	4,100	22																	
Lakeview.	Lake.	4,825	28																	
Merrill.	Klamath.	4,070	5	65.4		94	16	33	8	43	0.17		0.15	0	2	25	5	1		
Yoncalla.	do.	4,146	4	64.4		96	16	28	1	58	0.13		0.12	0	2	16	10	5	w.	
<i>California.</i>																				
Alameda.	Alameda.	1	62.4			84	1	52	1†	32	T.		T.	0	0	9	19	3	nw.	
Alturas.	Modoc.	4,460	7	68.0		101	16	34	1†	55	0.97		0.55	0	4	21	10	0	sw.	
Angiola.	Tulare.	208	11	82.2	+ 4.3	105	15†	50	1	49	0.00	- 0.00	0.00	0	0	31	0	0	nw.	
Antioch **.	Contra Costa.	46	32	84.6	+ 8.8	102	16	60	5		0.00	- 0.00	0.00	0	0	31	0	0	e.	
Aptos **.	Santa Cruz.	102	26	61.8	- 0.5	76	16	52	3		0.00	- 0.01	0.00	0	0	20	8	3	nw.	
Arrowhead Springs.	San Bernardino.	2,000	2	80.6		103	30	53	1	37	0.00		0.00	0	0	0	0	0		
Auburn.	Placer.	1,360	40	75.2	- 1.6	106	15†	53	1†	45	0.00	- 0.02	0.00	0	0	30	0	1		
Avalon.	Los Angeles.	1	64.3			81	14	55	11	22	T.		T.	0	0	30	1	0	w.	
Azusa.	do.	540	9	76.2		106	15	51	28	54	0.00		0.00	0	0	30	0	1	sw.	
Bagdad.	San Bernardino.	784	8	97.4		115	16†	81	2	28	0.00		0.00	0	0	0	0	0	Do.	
Bakersfield.	Kern.	404	22	83.4	- 5.2	105	14	57	1	36	0.00	- 0.02	0.00	0	0	0	0	0	Dr. E. Soegard.	
Barstow.	San Bernardino.	2,105	8	87.0		111	16	62	9	44	0.36		0.36	0	1	31	0	0	Southern Pacific Co.	
Berkeley.	Alameda.	317	24	59.6	- 1.4	82	1	52	3†	47	T.	- 0.04	T.	0	0	13	11	3	Do.	
Biggs **.	Butte.	98	12	79.1	+ 0.4	109	16	58	20		0.00	- 0.00	0.00	0	0	31	0	0	E. L. White.	
Bishop.	Inyo.	4,450	16	72.5	- 0.4	95	16	47	1	45	0.18	+ 0.07	0.13	0	2	22	4	5	State University.	
Bishop Creek.	do.	8,500	1	61.2		78	9†	39	1	34	0.00		0.00	0	0	11	0	0	Southern Pacific Co.	
Blocksburg.	Humboldt.	1,700	5	71.2		105	17	46	21	52	0.00		0.00	0	0	28	0	3	Victor Hope.	
Blue Canon.	Placer.	4,695	12	67.9	+ 1.9	90	16†	44	22	35	0.00		0.00	0	0	27	4	4	Southern Pacific Co.	
Blythe.	Riverside.	2	88.2			113	15	65	29	45	1.04		0.58	0	4	21	9	1	Do.	
Brauscomb.	Mendocino.	2,000	11	71.0		101	15	39	20	45	T.	- 0.13	T.	0	0	26	5	0	Ray W. Ward.	
Brawley.	Imperial.	-105	20	90.3		114	30	69	21	38	0.45		0.45	0	1	0	0	0	A. J. Haun.	
Brush Creek.	Butte.	2,140	7	79.3		105	15†	50	17	51	T.		T.	0	0	27	2	2	M. D. Witier.	
Burney.	Shasta.	3,300	1	66.8		98	16	35	1	49	T.		T.	0	0	20	10	1	Cal. Gas. & Elec. Co.	
Calexico.	Imperial.	0	6	90.3		113	15	72	3†	38	0.33		0.25	0	2	14	6	11	Mrs. M. D. Chambers.	
Caliente **.	Kern.	1,290	35															J. E. Peck.		
Calistoga **.	Napa.	363	39	73.6	+ 1.0	102	16	55	1		0.00	- 0.02	0.00	0	0	31	0	0	Southern Pacific Co.	
Campbell.	Santa Clara.	217	14	64.2	- 0.7	91	1	42	10†	45	0.00	- 0.02	0.01	0	1	32	6	3	F. P. Righter.	
Camptonville (near) §.	Yuba.	3,500	4	80.0		106	15†	54	7	42	0.00		0.00	0	0	30	0	1	Cal. Gas. & Elec. Co.	
Cedarville.	Modoc.	4,675	17	70.4	+ 1.2	94	16	40	8	41	0.37	+ 0.07	0.18	0	3	20	11	0	T. H. Johnstone.	
Chico.	Butte.	181	41	79.4	- 4.5	110	16	46	12	52	0.00	- 0.04	0.00	0	0	28	0	3	G. H. Stephenson.	
China Flat.	Humboldt.	600	2	77.2		112	16	46	1†	55	0.00		0.00	0	0	26	4	1	O. I. Westerburg.	
Chino **.	San Bernardino.	714	19																Southern Pacific Co.	
Cisco **.	Placer.	5,939	40	67.3	+ 4.1	89	17†	45	1		0.00	- 0.03	0.00	0	0	25	1	5	Do.	
Claremont.	Los Angeles.	1,200	19	75.0	+ 3.4	105	25†	50	5	47	0.01	- 0.02	0.01	0	1	32	6	3	F. P. Brackett.	
Cloverdale.	Sonoma.	340	8	70.2		101	8†	44	22	55	T.		T.	0	0	31	0	0	John O. Ogle.	
Colfax.	Placer.	2,421	40	77.0	+ 1.7	101	17	53	1	33	0.00	- 0.03	0.00	0	0	24	4	3	Southern Pacific Co.	
Colusa.	Colusa.	60	8	77.1		105	16	51	20	38	T.		T.	0	0	29	2	0	C. D. McCormish.	
Corning **.	Tehama.	277	25	92.0	+ 8.6	111	16	75	11		0.00	0.00	0.00	0	0	24	7	0	Southern Pacific Co.	
Cuyamaca.	San Diego.	4,677	12	71.2	+ 6.2	90	30†	55	8	31	0.64	+ 0.27	0.34	0	6	13	15	3	L. L. Macquarie.	
Daunt.	Tulare.	4,000	4	74.0		100	15	45	1	42	0.10		0.10	0	1	25	5	1	D. L. Wishon.	
Davisville.	Yolo.	51	39	74.2	- 3.7	110	16	40	8	55	0.00	- 0.02	0.00	0	0	23	4	4	S. H. Beckett.	
Deer Creek.	Nevada.	3,700	4	66.7		93	15†	40	22	42	T.		T.	0	0	28	3	0	Cal. Gas. & Elec. Co.	
Del Monte.	Monterey.	61.1	26			75	10	48	1	25	0.00		0.00	0	0	26	0	5	H. R. Warner.	
Delta.	Shasta.	1,138	26																Southern Pacific Co.	
Denair.	Stanislaus.	126	11	76.4	+ 0.3	105	16	50	1†	48	0.00	0.00	0.00	0	0	26	4	1	Santa Fe Co.	
Dobbins.	Yuba.	1,650	7	81.2		106	20†	36			0.00		0.00	0	0	26	5	0	Cal. Gas. & Elec. Co.	
Dudleys.	Mariposa.	3,600	2	70.2		97	16	42	1	45	T.		T.	0	0	22	5	4	W. H. Dudley.	
Dunnigan **.	Yolo.	65	34	90.6	+ 8.8	106	16	62	20		0.00	- 0.04	0.00	0	0	29	1	1	Southern Pacific Co.	
Dunsmuir **.	Siskiyou.	2,285	22	73.2	+ 3.7	111	16	54	21		1.94	+ 1.68	1.60	0	2	29	2	2	Do.	
Durham.	Butte.	160	16	79.5	+ 0.1	109	13	51	20	47	T.	- 0.05	T.	0	0	25	6	0	R. W. Durham.	
El Cajon.	San Diego.	482	12	73.0	+ 1.7	104	31	50	2†	46	0.00	- 0.04	0.06	0	0	29	2	0	H. H. Kessler.	
Electra.	Amador.	725	7	82.2		114	15†	52	20	52	0.00		0.00	0	0	24	5	2	Cal. Gas. & Elec. Co.	
Elsinore.	Riverside.	1,234	16	77.7	- 0.7	110	30†	48	3	53	0.00	- 0.02	0.00	0	0	24	5	2	A. F. Schult.	
Emigrant Gap.	Placer.	5,230	37	72.3	+ 4.8	93	17†	48	1†	34	0.00	- 0.03	0.00	0	0	27	1	3	Southern Pacific Co.	
Escondido.	San Diego.	657	657	72.4	- 0.1	104	31	51	1	50	0.11	+ 0.11	0.11	0	1	28	0	0	A. R. Moon.	
Eureka.	Humboldt.	64	25	53.8	- 1.5	64	25	46	8	12	0.00	- 0.09	0.00	0	0	3	13	13	U. S. Weather Bureau.	
Farmington **.	San Joaquin.	111	32	81.4	+ 3.2	106	16	63	12		T.	- 0.00	T.	0	0	28	3	0	Southern Pacific Co.	
Folsom.	Sacramento.	252	39	79.0	- 2.9	108	16	52	20†	42	T.	- 0.01	T.	0	0	29	1	1	F. O. Hutton.	
Fordyce Dam.	Nevada.	6,500	10	63.0		88	15†	39	7	39	0.15	- 0.05	0.15	0	1	21	10	0	E. E. Roening.	
Fouts Springs.	Colusa.	1,650	7	74.8		103	16	45	1	49	T.		T.	0	0	0	0	0	A. J. Burgi.	
Fresno.	Fresno.	293	24	84.0	+ 2.0	111	16	58	21	41	T.	- 0.00	T.	0	0	26	4	1	U. S. Weather Bureau.	
Fruto **.	Glennc.	624	22	85.2	+ 2.7	114	16	64	20		0.00	0.00	0.00	0	0	31	0	0	Southern Pacific Co.	
Galt **.	Sacramento.	49	33															Do.		
Georgetown.	Eldorado.	2,050	73.0	- 5.8	103	16	41	11	54	T.	- 0.06	T.	0</							

TABLE I.—Climatological data for July, 1911. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.				Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days 0.01 in. or more.	Number of partly cloudy days.	N m b e r o f c l o u d y d a y s .			
<i>California—Continued.</i>																				
King City.	Monterey.	333	24	69.0	—	95	15	41	1	44	T.	—	T.	0	0	22	8	s.		
Lake Eleanor.	Tuolumne.	4,700	17	66.0	+ 3.5	95	19	38	3	42	T.	—	0.25	T.	0	0	29	1	n.	
La Porte.	Plumas.	5,000	17	82.0	+ 3.6	110	15†	52	22	47	0.00	—	0.00	0.00	0	0	30	0	1	
Le Grand.	Merced.	255	11	82.0	+ 3.6	110	15†	52	22	47	0.00	—	0.00	0.00	0	0	30	0	1	
Lemon Cove.	Tulare.	600	16	86.1	+ 2.8	115	16	60	8†	47	0.00	—	0.01	0.00	0	0	25	4	w.	
Lick Observatory.	Santa Clara.	4,209	22	70.9	—	115	16	87	47	0.00	—	0.01	0.00	0.00	0	0	25	4	w.	
Livermore.	Alameda.	485	40	71.9	+ 1.8	107	25	48	22	56	T.	—	0.01	T.	0	0	27	3	w.	
LoHi.	San Joaquin.	45	29	73.7	0.0	100	16	47	21	42	0.00	—	0.00	0.00	0	0	30	1	w.	
Lone Pine.	Inyo.	2,728	6	77.0	—	98	6†	53	1	39	T.	—	T.	0	0	19	12	s.		
Long Valley.	Lassen.	4,400	2	73.8	—	97	5	44	9	47	1.63	—	1.25	0	0	16	4	11		
Los Angeles.	Los Angeles.	293	34	69.4	+ 2.0	93	15	55	28	30	T.	—	0.02	T.	0	0	13	15	sw.	
Los Baños **.	Mercel.	121	24	83.0	+ 1.5	108	14	65	20	—	0.00	—	0.01	0.00	0	0	27	0	w.	
Los Gatos.	Santa Clara.	600	24	67.8	+ 0.1	92	17	48	30	44	T.	—	0.00	T.	0	0	30	1	n.	
McCloud.	Siskiyou.	3,410	1	66.8	—	93	16	36	1	43	0.68	—	0.58	0	0	26	5	s.		
Macdoel.	do.	4,258	4	65.2	—	98	16	30	1	49	1.48	—	1.03	0	0	17	9	sw.		
Madelaine.	Lassen.	5,270	2	63.6	—	88	12	35	7	50	0.25	—	0.10	0	0	16	9	w.		
Magalia.	Butte.	2,321	37	76.8	—	105	16	53	20	41	0.00	—	0.00	0	0	39	0	se.		
Mammoth Tank.	Imperial.	257	33	92.8	- 5.7	116	31	70	22	39	2.50	+ 2.44	1.50	0	0	19	9	3		
Marysville.	Yuba.	67	46	78.4	- 1.6	107	16	52	20†	49	0.00	—	0.00	0	0	30	0	s.		
Mecca.	Riverside.	-185	5	90.4	—	116	15†	66	8	38	0.15	—	0.15	0	1	17	13	se.		
Menlo Park **.	San Mateo.	64	33	67.1	- 0.6	92	3	52	21	—	0.00	—	0.01	0.00	0	0	1	1	Do.	
Merced.	Merced.	173	7	80.8	- 0.9	105	16	62	22	37	0.00	—	0.01	0.00	0	0	26	4	nw.	
Mill Creek (1).	Amador.	4	70	6.6	—	96	16	46	1	42	0.00	—	0.00	0	0	30	1	nw.		
Milton (near).	Calaveras.	660	20	80.4	+ 1.8	107	16	51	20	39	T.	—	0.00	T.	0	0	29	2	nw.	
Modesto **.	Stanislaus.	90	39	86.4	+ 4.9	102	26	70	18	—	0.00	—	0.01	0.00	0	0	31	0	Do.	
Mojave.	Kern.	2,751	34	93.8	+ 8.1	112	16	68	1	30	0.00	—	0.08	0.00	0	0	31	0	Do.	
Mokelumne Hill.	Calaveras.	1,550	18	79.8	+ 4.0	103	16	54	20	33	T.	—	0.00	T.	0	0	26	5	w.	
Mono Ranch.	Ventura.	3,210	5	69.8	—	95	15	43	1	41	T.	—	T.	0	0	26	3	w.		
Montague.	Siskiyou.	2,450	23	73.0	- 6.4	106	15†	37	1	58	1.16	+ 1.09	1.05	0	0	36	13	sw.		
Monterey **.	Monterey.	15	46	57.5	- 3.5	68	17	46	24†	—	0.00	—	0.00	0	0	31	0	sw.		
Monterio.	Kern.	4,500	12	76.0	- 0.2	100	15	50	1	32	0.00	—	0.08	0.00	0	0	16	13	nw.	
Mount Tamalpais.	Marin.	3,275	7	72.2	+ 1.7	94	16	52	20	33	0.02	+ 0.01	0.02	0	0	1	28	3	nw.	
Napa City.	Napa.	20	34	64.8	- 1.0	98	25	45	30	48	T.	—	0.01	T.	0	0	7	24	s.	
Napa (S. H.).	do.	60	33	64.1	- 1.7	93	1	48	30	42	T.	—	0.01	T.	0	0	30	1	sw.	
Needles.	San Bernardino.	477	19	92.9	- 1.5	112	15†	73	1	39	0.42	—	0.00	0.22	0	0	22	0	sw.	
Nellie.	San Diego.	5,350	2	65.6*	—	89	30	48	1†	39	0.47	—	0.15	0	5	0	0	27	4	sw.
Nevada City.	Nevada.	2,580	19	72.2	+ 3.6	102	16	43	8	50	T.	—	0.03	T.	0	0	30	0	sw.	
Newcastle.	Placer.	970	18	—	—	—	—	—	—	—	—	—	—	0	0	30	0	1	se.	
Newhall **.	Los Angeles.	1,200	34	75.3	- 1.3	111	15	55	10	—	0.00	—	0.00	0.00	0	0	0	1	se.	
Newman.	Stanislaus.	91	22	84.8	+ 0.2	107	16	63	20	34	0.00	—	0.01	0.00	0	0	31	0	n.	
Nimshew.	Butte.	2,500	7	73.8	—	101	15	50	1†	40	0.00	—	0.00	0	0	0	0	0	sw.	
North Bloomfield.	Nevada.	3,200	14	73.9	+ 1.7	100	15†	52	1†	41	0.00	—	0.09	0.00	0	0	21	7	s.	
North Fork.	Madera.	3,000	7	72.2	—	104	16†	40	29	57	0.00	—	0.00	0	0	22	4	w.		
Oakdale **.	Stanislaus.	156	17	80.8	+ 1.1	108	16	55	24†	—	0.00	—	0.00	0.00	0	0	29	2	nw.	
Oak Grove.	San Diego.	1	73.4	—	104	30	42	1	53	0.44	—	0.21	0	4	19	12	0	sw.		
Oakland.	Alameda.	36	35	61.7	- 0.1	85	1	52	13†	30	0.00	—	0.02	0.00	0	0	13	14	w.	
Oceanside.	San Diego.	1	70.0	—	83	3†	57	11	24	0.15	—	0.15	0	1	6	24	1	w.		
Ojai Valley.	Ventura.	900	5	73.1	—	110	30	47	28	55	T.	—	0.02	T.	0	0	25	5	sw.	
Orland.	Glen.	254	29	83.4	- 3.0	111	16	54	19	45	T.	—	0.02	T.	0	0	26	4	s.	
Orleans.	Humboldt.	520	8	80.8	—	116	16	48	1	53	T.	—	0.03	T.	0	0	29	2	sw.	
Oroville (near).	Butte.	250	27	81.0	- 0.3	112	16	52	19	44	T.	—	0.03	T.	0	0	26	1	s.	
Palermo.	do.	213	20	77.1	- 1.8	110	8	47	29	48	0.00	—	0.04	0.00	0	0	21	10	sw.	
Palm Springs **.	Riverside.	584	22	93.3	- 4.4	117	30	76	1	—	0.00	—	0.03	0.00	0	0	13	12	w.	
Pasadena.	Los Angeles.	827	21	71.1	- 0.3	99	25	50	1	44	0.60	—	0.00	0.00	0	0	30	1	sw.	
Paso Robles.	San Luis Obispo.	800	24	70.9	- 1.6	110	16	40	8	58	0.00	—	0.00	0.00	0	0	29	1	nw.	
Peachland.	San Luis Obispo.	190	15	63.0	- 3.0	96	25†	41	22†	54	T.	—	0.01	T.	0	0	23	8	sw.	
Penstock Camp.	Tuolumne.	3,750	4	78.5	+ 5.8	114	4	50	1†	54	0.00	—	0.02	0.00	0	0	5	5	sw.	
Placerville.	El Dorado.	1,875	22	78.5	+ 5.8	114	4	50	1†	54	0.00	—	0.01	0.00	0	0	5	21	w.	
Point Lobos.	San Francisco.	250	18	55.5	- 0.5	78	1	48	15	23	0.00	—	0.01	0.00	0	0	3	4	sw.	
Point Reyes.	Marin.	490	19	52.2	- 1.5	62	12	47	3	11	T.	—	0.10	T.	0	0	27	2	sw.	
Porterville.	Tulare.	464	22	84.1	- 4.0	110	15†	55	1†	48	0.00	—	0.06	0.00	0	0	27	4	sw.	
Quincy.	Plumas.	3,400	16	66.8	+ 0.9	96	15	38	24†	54	T.	—	0.08	T.	0	0	29	1	se.	
Red Bluff.	Tehama.	307	34	83.8	+ 1.7	112	15	50	20	37	0.00	—	0.03	0.00	0	0	29	4	w.	
Redding.	Shasta.	552	35	84.2	+ 1.9	108	15†	61	20†	36	T.	—	0.09	T.	0	0	23	2	s.	
Redlands.	San Bernardino.	1,352	18	77.4	- 0.9	105	15†	53	9	43	T.	—	0.04	T.	0	0	19	8	w.	
Reedley.	Fresno.	347	11	78.8	- 0.3	102	24	45	23†	53	T.	—	0.00	0.00	0	0	22	7	se.	
Rialto (near).	San Bernardino.	2,250	5	78.8	—	102	16	51	2	32	0.00	—	0.00	0.00	0	0	16	13	sw.	
Riverside.	Riverside.	851	29	75.9	- 0.4	107	25†	50	4	53	0.10	+ 0.08	0.10	0	0	31	0	0	sw.	
Rocklin.	Placer.	249	40	80.6	+ 0.6	109	16	50	19	43	0.00	—	0.03	0.00	0	0	23	2	sw.	
Rohnerville.	Humboldt.	75	57	57.2	—	71	25	40	9	25	T.	—	T.	0	0	23	7	1	nw.	
Sacramento (1).	Sacramento.	71	34	73.0	+ 0.5	100	26	51	19	41	0									

TABLE 1.—Climatological data for July, 1911. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>California—Continued.</i>																				
Sierraville.....	Sierra.....	5,000	1	65.0	—	93	16	32	22	55	0.30	+ 0.12	0	3	25	1	5	n.	C. D. Johnson.	
Sisson.....	Siskiyou.....	3,555	22	67.8	— 1.9	94	12†	42	4†	46	0.72	+ 0.67	0.60	0	2	28	0	3	n.	Southern Pacific Co.
Soledad **.....	Monterey.....	188	37	66.2	+ 0.1	85	7	52	22	...	0.00	0.00	0.00	0	0	31	0	0	n.	Do.
Southeast Farallon.....	San Francisco.....	30	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	U. S. Weather Bureau.	
Sonora.....	Tuolumne.....	1,825	23	78.6	—	104	16	53	1†	42	0.00	— 0.02	0.00	0	0	30	1	0	sw.	Chas. P. Jones.
Squirrel Inn.....	San Bernardino.....	5,280	1	66.4	—	88	30	52	1†	35	T.	T.	T.	0	0	31	0	0	s.	A. D. Frantz.
Sirling City.....	Butte.....	3,525	7	74.3	—	101	16	51	21	40	0.00	—	0.00	0	0	28	2	1	se.	Butte County R. R. Co.
Stockton (S. H.).....	San Joaquin.....	23	40	73.9	+ 1.3	98	25	51	20	40	0.00	— 0.02	0.00	0	0	31	0	0	nw.	State Hospital.
Storey.....	Madera.....	296	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Santa Fe Co.	
Suisun **.....	Solano.....	20	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Southern Pacific Co.	
Summerdale.....	Mariposa.....	5,270	15	70.0	+ 1.5	96	15	43	1	34	0.00	— 0.03	0.00	0	0	26	5	0	...	Mrs. J. E. Lowry.
Summit.....	Placer.....	7,017	38	58.8	— 2.2	80	16	36	25	35	0.00	— 0.20	0.00	0	0	29	0	2	sw.	Southern Pacific Co.
Susanville.....	Lassen.....	4,175	22	68.2	— 3.6	96	17	39	1†	44	0.77	+ 0.65	0.42	0	3	19	12	0	sw.	James Bramham.
Tamarack.....	Alpine.....	8,000	5	55.8	—	86	18	28	1†	45	0.83	—	0.22	0	8	17	14	0	sw.	William Bennett.
Tehachapi **.....	Kern.....	3,964	34	81.3	+ 4.9	99	16	69	23†	...	0.00	— 0.01	0.00	0	0	29	1	1	n.	Southern Pacific Co.
Tehama **.....	Tehama.....	220	40	86.8	+ 2.7	111	16	70	1	...	0.00	— 0.08	0.00	0	0	23	7	1	n.	Do.
Tejon Rancho.....	Kern.....	1,500	9	78.3	—	95	17	55	1	24	T.	T.	T.	0	0	19	10	2	sw.	S. E. Bailey.
Three Rivers.....	Tulare.....	870	1	81.4	—	108	16	54	1	45	T.	T.	T.	0	0	30	1	0	sw.	E. D. Barton.
Towle.....	Placer.....	3,704	25	69.9	— 1.2	93	8	39	4	44	T.	— 0.11	T.	0	0	26	5	0	nw.	Southern Pacific Co.
Tracy **.....	San Joaquin.....	64	31	84.9	+ 5.0	105	16	64	20	...	0.00	— 0.01	0.00	0	0	26	0	0	nw.	Do.
Ukiah.....	Mendocino.....	620	18	75.4	+ 2.0	110	16	43	21	58	0.00	— 0.03	0.00	0	0	31	0	0	nw.	Dr. Geo. McCowen.
Upland.....	San Bernardino.....	1,750	14	74.2	+ 1.1	104	25	49	7	44	0.00	— 0.01	0.00	0	0	29	2	0	w.	A. P. Harwood.
Upper Lake.....	Lake.....	1,350	26	77.4	+ 4.3	108	15	49	1	46	0.00	— 0.03	0.00	0	0	30	1	0	nw.	C. M. Hammond.
Vacaville.....	Solano.....	175	23	74.0	— 1.8	106	16	43	26	62	0.00	— 0.00	0.00	0	0	27	4	0	sw.	G. O. Coburn.
Valley Springs **.....	Calaveras.....	673	22	80.4	— 0.6	109	16	58	20	...	0.00	— 0.03	0.00	0	0	31	0	0	nw.	Southern Pacific Co.
Visalia.....	Tulare.....	334	23	79.4	— 1.6	107	16	52	22	44	T.	— 0.03	T.	0	0	26	4	1	...	Santa Fe Co.
Warner Springs.....	San Diego.....	3,165	3	73.5	—	97	30	51	1†	41	0.14	—	0.14	0	1	19	7	5	...	Mrs. F. S. Sandford.
Wasco.....	Kern.....	336	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Santa Fe Co.	
Watsonville.....	Santa Cruz.....	23	15	59.2	— 4.1	82	1	39	1	43	0.00	— 0.00	0.00	0	0	5	25	1	sw.	Spreckels Sugar Co.
Weitchpec.....	Humboldt.....	1,700	1	71.2	—	102	16	41	7	42	0.03	—	0.03	0	1	29	1	1	ne.	M. E. Lathrop.
Westley **.....	Stanislaus.....	90	22	81.6	— 1.5	108	16	60	24	...	0.00	— 0.03	0.00	0	0	31	0	0	n.	Southern Pacific Co.
Wheatland.....	Yuba.....	84	24	77.4	+ 0.2	106	16	52	20	40	T.	— 0.01	T.	0	0	27	3	1	s.	Wm. Lumbard.
Willows.....	Glenn.....	136	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	L. C. Stiles.	
Yosemite.....	Mariposa.....	3,945	7	71.8	—	98	13†	42	1	50	0.39	—	0.37	0	2	26	5	0	s.	J. P. Kelly.

*, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for July, 1911. District No. 11, Oregon.*

TABLE 2.—*Daily precipitation for July, 1911. District No. 11—Continued.*

TABLE 2.—*Daily precipitation for July, 1911. District No. 11—Continued.*

TABLE 2.—*Daily precipitation for July, 1911. District No. 11—Continued.*

Stations.	Watershed.	Day of month.																													Total			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
<i>California—Con.</i>																																		
Upper Lake.....	Sacramento.....																																0.00	
Upper Mattole.....	Coast.....																																0.00	
Vacaville.....	Sacramento.....																																0.00	
Valley Springs.....	San Joaquin.....																																0.00	
Visalia.....	do.....											T.																				T.		
Warner Springs.....	Coast.....											T.																					0.14	
Wasco.....	San Joaquin.....																																0.00	
Watsonville.....	Coast.....																																0.00	
Weitchpec.....	Klamath.....																																0.03	
West Branch.....	Sacramento.....																																T. .03	
Westley.....	San Joaquin.....																																0.00	
West Point.....	do.....											T.																				T.		
West Saticoy.....	Coast.....												T.	T.																			0.00	
Wheatland.....	Sacramento.....																																T.	
Willows.....	do.....																																0.39	
Yosemite.....	San Joaquin.....																																	

* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—Maximum and minimum temperatures for July, 1911. District No. 11, California.

Date.	Lakeview, Oreg.		California.																									
			Alturas.		Barstow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independ-		Los Ange-		Mount Ta-		Nevada		Porter-		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1.			80	34	95	67	84	46	96	74	92	68	57	49	95	61			73	59	82	63	91	45	90	55	93	66
2.			89	34	98	67	86	47	101	69	95	61	56	50	100	65			71	59	77	66	91	48	100	56	98	70
3.			87	43	100	69	87	47	107	69	93	68	61	50	102	66			75	58	80	61	92	49	101	56	97	67
4.			92	44	98	65	89	51	108	54	94	61	59	52	101	66			76	58	79	63	96	49	103	65	100	67
5.			96	46	100	70	90	58	110	73	95	59	60	50	104	66			79	58	81	69	96	50	103	67	102	68
6.			93	47	106	70	90	55	107	73	92	61	58	51	103	68			78	59	83	65	97	52	102	68	98	69
7.			87	45	105	73	86	57	107	74	90	58	57	49	100	68			74	58	73	61	95	47	100	62	97	69
8.			82	37	106	73	93	58	105	70	96	70	58	46	98	62			74	59	82	62	93	43	98	63	96	68
9.			90	35	108	62	95	47	107	69	94	63	59	47	104	68			72	57	83	66	92	51	103	64	102	74
10.			94	40	100	70	87	55	106	71	94	60	59	48	95	68			68	59	78	59	94	50	102	66	102	66
11.			90	47	102	75	80	50			90	66	56	48	99	71			74	58	77	59	88	59	101	69	101	68
12.			95	51	106	72	84	52	103	73	91	59	56	48	100	65			85	59	77	60	89	55	101	67	96	70
13.			94	47	109	70	85	55	110	75	95	64	55	48	101	68			84	63	73	62	92	49	101	67	98	70
14.			94	50	109	70	96	55	107	74	98	60	55	48	104	69			84	61	82	65	98	54	102	67	106	69
15.			97	50	107	78	101	61			101	65	56	49	107	79			93	66	90	74	99	60	110	80	112	75
16.			101	53	111	83	98	65	113	82	105	73	57	49	111	78			90	66	94	79	102	61	110	77	111	83
17.			94	54	100	83	93	63			100	67	57	50	106	79			80	62	81	67	98	63	105	82	102	82
18.			90	49	108	73	86	47	108	80	90	62	57	50	98	74			81	62	74	63	92	59	103	75	98	72
19.			89	50	103	69	80	40	102	78	84	55	58	50	99	66			77	60	69	53	91	51	100	68	91	66
20.			89	47	102	71	84	39	102	84	84	51	57	52	95	61			75	60	70	52	90	46	99	62	92	59
21.			87	41	93	73	83	40	95	72	85	53	59	54	95	58			76	61	70	58	87	45	98	61	92	62
22.			89	42	95	70	90	48			89	54	58	52	96	61			74	61	76	64	91	44	98	61	96	65
23.			92	43	103	68	93	50			91	55	56	51	96	62			75	59	75	63	93	47	104	65	97	62
24.			89	47	106	67	96	51	108	79	90	62	58	50	102	63			79	57	83	60	87	60	103	64	83	72
25.			86	58	106	67	96	51	105	80	97	61	64	53	104	65			88	58	90	74	85	51	106	63	100	70
Mns.			90.6	45.5	103.2	70.8	90.0	52.1	105.5 f	75.1 g	93.2	61.0	57.5	50.0	101.1	67.0			79.1	59.7	79.9	64.6	93.4	51.1	102.1	66.1	98.6	69.1

Date.	California.																				Yosemite.					
	Redlands.		Sacramento.		San Diego.		San Fran-		cisco.		San Jose.		San Luis		Santa		Santa		Sisson.		Stockton.		Summit.		Susanville.	
																					Max.	Min.	Max.	Min.	Max.	Min.
1.																					64	40	74	39	88	42
2.																					66	42	83	44	90	44
3.																					68	37	87	49	90	45
4.																					70	41	87	59	92	45
5.																					92	57	75	42	90	47
6.																					77	58	87	75	95	51
7.																					107	71	101	76	106	70
8.																					98	47	104	72	98	70
9.																					92	51	102	62	96	66
10.																					88	47	93	39	96	47
11.																					57	55	88	57	95	57
12.																					50	48	88	55	91	50
13.																					53	40	88	39	93	47
14.																					58	57	82	58	98	57
15.																					55	54	84	55	94	60
16.																					60	53	87	57	98	57
17.																					53	49	87	55	97	57
18.																					58	53	88	53	95	60
19.																					60	57	86	58	98	53
20.																					57	55	84	55	95	60
21.																					83	51	71	42	83	46
22.																					89	54	72	40	82	45
23.																					87	53	68	42	91	47
24.																					87	53	78	50	88	48
25.				</td																						